

## CLAIMS

1. A multifunction instrument (10) for measuring biochemical and medical samples, which are preferably placed into the wells (13) of the sample plates (12) and measured by a  
5 detector (20), the instrument having means for moving the detector into two different positions for using at least two different light paths (24, 30) for measuring the samples, characterized in that the multifunction instrument (10) is provided with a device (14) for moving the detector (20) into the following two different positions for two different light paths (24, 30):
- 10 - in the first position for measuring radioactive labels by liquid scintillation counting the detector (20) is placed close to the sample or sample well (13) for receiving signals via the first light path (24) without any light conducting components between the detector and the sample,
- and in the second position for non-radioactive measuring, such as fluorescence  
15 measuring the detector (20) is arranged to receive emitted light from the sample via the second light path (30), where is at least one optical component, such as a lens, mirror or a glass fiber between the detector and the sample.
2. A multifunction instrument (10) as claimed in claim 1, characterized in that the  
20 multifunction instrument (10) is provided with a rotating device (14) for rotating the detector (20) in two different positions for the said two different light paths (24, 30).
3. A multifunction instrument (10) as claimed in claim 1 or 2, characterized in that  
25 in the first position of the detector (20) the first light path (24) is provided for liquid scintillation counting and/or luminescence counting,
4. A multifunction instrument (10) as claimed in claim 1, 2 or 3, characterized in  
that in the second position of the detector (20) the multifunction instrument (10) has a light  
30 source (40) provided for excitation light with the second light path (30) for fluorescence measuring.
5. A multifunction instrument (10) as claimed in any of claims 1-4, characterized in  
that the multifunction instrument (10) is provided with an absorbance detector (50) to be  
used with the said light source (40).

6. A multifunction instrument (10) as claimed in any of claims 1-5, characterized in that

- the detector (20) is provided with slide (26, 27) and guide (22, 23) elements for turning the detector into the said two positions,
- 5 - the rotating device (14) is provided to turn the detector (20) into the first position or the vertical position for liquid scintillation measuring and/or luminescence counting above the sample plate (12),
- and the rotating device (14) is provided to turn the detector (20) into the second position or the horizontal position for fluorescence measuring via the second light
- 10 path.

7. A multifunction instrument (10) as claimed in any of claims 1-6, characterized in that the vertical first position of the detector (20) the detector is used for liquid scintillation counting and placed above the sample well (13) without any intermediate components.

15

8. A multifunction instrument (10) as claimed in any of claims 1-6, characterized in that in the vertical first position a cover plate (24) provided with an aperture is placed between the detector (20) and the sample well (13) for guiding the light from the sample through the aperture to the detector,

20

9. A multifunction instrument (10) as claimed in claim 8, characterized in that

- the cover plate (24) is a slide element provided with at least two apertures of different size diameter,
- and the slide element (24) can be moved in horizontal direction for placing any of the
- 25 apertures above the sample well (13) to be measured.

10. A multifunction instrument (10) as claimed in claims 8 or 9, characterized in that at least one aperture in the slide (24) element is funnel shaped so that the aperture end of smaller diameter facing the sample well (13) substantially fits the size of the

30 diameter of the sample well.